APPENDIX B

NBC Operations

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DEFENSE MEASURES

Threat forces have engaged in sustained efforts to build up their combat capability to employ NBC weapons and to survive and fight in an NBC environment. Their forces are large, well-equipped, and well-trained in NBC operations and defense. In addition to specialized NBC troops, all other threat combat and combat support forces receive extensive NBC training. Therefore, it is imperative that MSB personnel are capable of operating in such an environment.

Contamination avoidance, protection (individual and collective), and decontamination are the basic defense against NBC hazards. MSB personnel must be trained in these defensive measures to minimize the effects of NBC attacks. FMs 3-3, 3-4, 3-5 and 3-100 have details.

PLANNING

The plans-operations branch of the S2/S3 section is responsible for developing the NBC defense plan. The branch reviews the tactical SOP and the DISCOM NBC vulnerability analysis to develop the plan. The plan must include an NBC defense requirement forecast and a set of priorities for decontamination of MSB assets. The S2/S3 section also directs preparation for an NBC attack. It identities backup C2 procedures and components of and procedures for NBC defense teams. In developing the defense plan, the branch coordinates with the following elements:

- MSB S1 and medical company for medical evacuation and treatment support.
- Support operations section for alternate methods of providing supply, services, and maintenance support.
- Communications branch of the S2/S3 section for alternate lines of communication.

CONTAMINATION AVOIDANCE

The main defensive measure against NBC hazards is contamination avoidance. This reduces and sometimes eliminates requirements for protection and decontamination. Measures include–

- Taking passive measures such as dispersion, cover, concealment, deception, camouflage, and OPSEC.
- Tasking soldiers to chemical detection and radiological monitoring/survey teams. These teams obtain information about contamination hazards. FM 3-100 covers NBC marking in depth.
- Limiting contamination spread. Measures may be taken before, during and after an NBC attack to limit the spread and exposure to other individuals, equipment, and areas. These include prescribing levels of MOPP.
- Detecting identifying, and marking. Advance warning is vital to avoidance. Remote and local automatic alarms are deployed to provide early detection, warning, and identification of NBC hazards. The MSB commander is responsible for placing and maintaining the NBC contamination

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marking signs in the DSA. FM 3-100 covers NBC marking in depth.

- Relocating to an uncontaminated area. Unless the attack consists of a nonpersistent chemical agent, the DSA is generally moved as soon as the tactical situation allows to minimize exposure to residual hazards. If the decision is made to remain in place, the contamination hazard must be lessened or avoided as much as possible. The MSB commander works with ROC and DISCOM headquarters to analyze the units' situations to determine if immediate relocation to a clean (uncontaminated), alternate location is necessary and possible. He gives primary consideration to the current tactical situation and protection offered by present position. He also considers the increased exposure to the hazard that would be caused by relocation and the possibility of further NBC attack. The degree of decontamination required and the impact of continuing to provide support in partial or full protection also affect the decision.

PROTECTION

The MSB S2/S3 directs the response to an NBC attack. He is responsible for alerting higher, lower, and adjacent units. He alerts GRREG points and aid stations of NBC hazards. He coordinates support with and sends all required NBC reports to the DISCOM S2/S3.

On the individual soldier level, the best protection against a nuclear attack is to be well dug in with overhead cover. Deeply dug foxholes, caves, tunnels, or storm drains provide good protection. Most buildings do not. Basements of concrete or steel framed buildings may be adequate if available. Personnel should react immediately to the initial sign of attack, a flash. They drop to the ground or into a foxhole immediately without trying to move to cover. They close their eyes, put arms near or under their bodies, and keep helmets on. They should stay down until the shock wave has passed and returned. Once it has passed, injuries should be treated and preparations made for ensuing fallout. The area should be monitored and appropriate actions taken. Improvements may be made to shelters and food and water should be placed in protected areas.

The basic individual protection against a biological agent attack is the wearing of the protective mask with hood attached. The duty uniform and gloves provide additional protection against bites from vectors such as mosquitoes and ticks that carry disease microorganisms. Adequate protection against biological toxins such as "yellow rain" requires MOPP 4.

In a chemical environment logistics personnel must wear MOPP gear for extended periods, which may result in lower productivity. All soldiers must know the signals and alarms and react to them quickly. Detection teams should be designated in advance to survey contaminated areas.

DECONTAMINATION

When personnel, equipment, and areas within the DSA have been exposed to NBC contamination, decontamination measures must be taken as soon as possible. How much decontamination used will depend on the tactical situation and mission, the decontamination resources available, and how badly the DSA has been contaminated. Most items can be decontaminated with soap and water or decontaminating apparatus. The same applies to contamination with a biological toxin. Radiological decontamination steps are based on results of fallout surveys, tactical plans, and NBC warnings and predictions from the division.

SUPPORT MISSION IMPLICATIONS

When enemy uses nuclear weapons or chemical/biological agents, unusual demands are placed on the MSB and other logistics activities. Priorities must be set in advance to ensure effective logistics support during NBC attack. Normally, supply of ammunition, fuel, food, water, and chemical

defense equipment and essential maintenance are given the highest priorities. These demands and the measures to counter an NBC attack are discussed in the following paragraphs.

SUPPLY

In an NBC environment, the most critical supply items are issued on an automatic basis. Emergency resupply may be by air. There may be a marked increase in contaminated supplies. Supplies exposed to contamination must be checked (monitored) before use or issue. Contaminated stocks are normally not issued. Until fully decontaminated, they are segregated from clean stock. In emergencies, when not enough uncontaminated supplies are available, certain contaminated supplies may be used. However, contaminated supplies are only issued if they would give the receiving unit a decisive tactical advantage. Contaminated supplies would be issued first to units similarly contaminated. Only under the most dire circumstances would contaminated stocks be issued to an uncontaminated unit. The decision to issue contaminated items is made jointly by the issuing and receiving commanders. Every attempt is made to avoid unnecessary spread of contamination. Contaminated stocks are clearly marked using standard NBC markers.

Class I

Preplanned resupply is not normally provided to units operating in or near contaminated areas because units carry enough MREs to conduct operations without daily resupply. Also, emergency nutrients that can be consumed while wearing the protective mask are issued in an active NBC environment.

Rations are stored under protective coverings or in containers to prevent or reduce contamination. Decontamination efforts are limited to removing the containers and carton overwrap. Rations that are contaminated are not normally used. Supporting chemical units and medical personnel can provide technical assistance. They also give advice on the use of rations.

Water

Contaminated water is not issued or used. Water from local sources, such as lakes, ponds, and water systems, can become contaminated. Therefore, sources must be tested before use. If a water source is suspected of contamination, it is marked with NBC markers and not used until it is tested, treated with a ROWPU if necessary, and determined to be safe to use. Whenever water becomes contaminated and cannot be treated for drinking purposes, it is deposed of in a manner that prevents secondary contamination. The area is marked appropriately. All water treatment, storage, and dispensing equipment is monitored frequently for possible contamination.

Class II

Selected class II items, such as chemical defense equipment, receive priority of issue to selected units on an NBC battlefield. Highest priority support is given to units located in contaminated areas. The next priority is to units that recently left contaminated areas. The third priority is to units deployed in forward areas.

Class III

Class III supply is critical in an NBC environment. More frequent unit moves increase consumption. Emergency resupply of isolated units may be by air. Storage tanks and bladders protect bulk petroleum to a large degree. However, precautions must be taken to reduce contamination on tanks and bladders.

Class IV

Selected high-usage class IV items are provided with consolidated shipping containers for protection against NBC effects. This reduces handling and allows for responsive support. When properly identified, contaminated, or partially decontaminated class IV items may be issued. If decontamination is required, it is done by the user.

Class V

Ammunition support elements are responsible for decontaminating ammunition under their control, though deliberate decontamination may require

additional support. If the situation requires the issue of contaminated stocks, the standard NBC markers will be used. After issue, the user performs required decontamination.

Class VII

In NBC conditions, corps heavy materiel supply companies are responsible for decontamination of class VII items before issue. If contaminated items have to be issued, the receiving unit is responsible for decontamination. Prior to issue of contaminated items, the standard NBC marker will be affixed to the items. Every effort is made to avoid abandoning class VII items due to contamination.

Class IX

Contaminated class IX items are normally issued only in emergencies. In such cases, items for critical weapon systems may be issued. Before issue, the items are marked with the standard NBC markers. Repair parts, especially sensitive electronic parts, must be checked for damage before issue.

MAINTENANCE

Avoiding contamination of equipment is easier than decontaminating it. Decontamination is time consuming, and it causes corrosion and damage to some types of equipment. Providing overhead cover for equipment and supplies will significantly reduce liquid contamination of such materiel.

Petroleum products trap chemical contamination. They collect in bolt threads, hydraulic fluids, and closed assemblies. Hence, a vehicle may be safe to drive without MOPP 4, but not be safe to repair. Also, since oil, grease, and dirt degrade the effectiveness of chemical overgarments, mechanics must keep as clean as possible. Wet weather gear helps but causes heat buildup. As much as possible, maintenance company elements should operate in protected areas like underground garages and concrete buildings.

Using units will decontaminate their own equipment within their capabilities. Equipment turned over to maintenance personnel must be as free of contamination as the using unit can make it. When using units are not able to decontaminate equipment, they should mark the equipment with the type and the date/time of contamination. If feasible, they should mark the specific areas of equipment contamination to alert maintenance personnel of the danger. They should also segregate contaminated materiel. When possible, MSB maintenance personnel segregate contaminated materiel. When possible, MSB maintenance companies operate both clean and contaminated repair areas.

On-site repair and recovery of contaminated equipment should not be done by uncontaminated teams. Contaminated equipment will be moved by other contaminated vehicles whenever possible. Otherwise repairs are done in MOPP 4 on contaminated equipment. Repair may be limited to the most critical items. Monitors should keep track of the level of contamination.

FM 43-12 has more on NBC maintenance operations.

MEDICAL

A marked increase in the number of persons needing medical care, a loss of medical assets, and contamination effects will severely tax the MSB medical company capabilities. Advanced stages of MOPP result in heat buildup, reduced mobility, and degradation of sight, touch, and hearing. Individual and unit operational effectiveness and productivity are degraded. Medical units will require augmentation commensurate with the threat to continue operations in an NBC environment.

In the case of a nuclear attack, burns from secondary fires and casualties from the blast will compound the problem caused by contaminated patients. Externally contaminated patients should be decontaminated as soon as possible. However, if required, lifesaving care must be provided before decontamination. Removal of clothes and use of soap and water will remove most contamination.

Biological attacks may be hard to detect. However, MSB medical facilities may help in detection by monitoring biological warfare indicators such as a sudden rise in disease fatality rates or an appearance of an exotic disease.

All casualties in a chemical fire zone are presumed contaminated. Due to the vapor hazard of working on contaminated patients, medical company personnel may have to work at MOPP 4 for long periods of time, with the associated performance degradation. The medical company has no organic decontamination assets. It can handle small numbers of contaminated patients. However, mass casualties likely to be created by a chemical attack will require augmentation with nonmedical troops.

The ambulance platoon leader should limit the ambulances entering a contaminated area to the minimum amount. Once contaminated an ambulance is not likely to be spared long enough to undergo deliberate decontamination. Normally, contaminated vehicles will have restricted use and be confined to contaminated areas.

Treatment and evacuation of NBC patients will be based upon manifested signs and symptoms. SOP will govern the use of prophylactic measures following known or suspected biological or chemical agent attack. Following a nuclear attack, individuals who suspect radiation injury may reach the treatment facility to seek medical attention. Suspected nuclear radiation injury alone, without specific symptoms and physical findings, does not justify evacuation. Ordinarily, in nuclear and conventional warfare, burns and traumatic injury will be the basis for early medical care and evacuation.

Detailed doctrine on medical operations in NBC conditions appears in FM 8-9, TC 8-12, and TMs 8-215 and 8-285.

TRANSPORTATION

Supply routes may become contaminated. These supply routes may be used, but personnel will require the use of protective equipment. Vehicles used on these routes will require decontamination. This is very time consuming and will cause delays in delivery of cargo. As such, special precautions are taken to avoid contaminated supply routes.

NBC reconnaissance and strict traffic control measures will aid in contamination avoidance and limit the spread of contamination and exposure to other individuals, equipment, and areas. Detours and rerouting however, increase turnaround time and more cargo vehicles may be required.

Use of Army aviation assets for resupply of forward areas may increase on a contaminated battlefield because of the increased need for dispersion. This will be based on METT-T. Resupply by air is often more effective than ground means because of the capability of flying over obstacles and contaminated areas. An additional mission of all aircraft is medical evacuation. Those assets must be prepared to perform that mission when medical evacuation assets are overloaded during mass casualty situations. Contamination avoidance for transportation is the same as that for supply.

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